

**Special Session on**

**“Hybrid Power Electronics Configurations for Renewable Energy  
Conversion/Storage Systems, and their Control Strategy”**

**Organized by**

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**Call for Papers**

Recently, Hybrid Power Electronics Configurations (HPEC) helps to create more efficient and smarter DCAC, DC-DC, AC-DC power converter that fits between the Renewable energy sources e.g. wind or PV panel and Grid or the energy storage battery pack. These power electronics configurations play an important role in controlling level of voltage and current, and maintain power flow in renewable grid and energy storage system. Owing to future perspectives and present demands, hybrid power converter configuration gained a popularity in various renewable energy system, micro grid, and energy storage system. The Hybrid Power Electronics Configuration (HPEC) terms is used to define power electronics configuration which combines two or more same/different conversion units, two or more same/different energy sources, two or more same/different energy storage system etc. in order to overcome limitation of classical systems. Various HPEC have been installed in many nations, and expanding renewable and energy storage system industry has developed cost competitive and reliable system using various combination of power electronics technologies. In present, HPEC research focused on the development of more efficient, reliable, cheaper, compatible, high voltage and current capability, reduced number of power devices etc. Recent past, numerous HPEC are proposed and focus by using hybrid renewable sources, power converters, advanced control strategy.

This special session target towards the ideas of the professional and research group into a common platform, to bring the latest development in Hybrid Power Electronics Configurations for renewable and energy storage technologies in terms of the hybrid power Electronics

circuits, advance control strategy, synthesis, mathematical modelling, design, cost optimization, control and Artificial Intelligence technologies etc.

**Topics of interest include, but are not limited to:**

- New Hybrid Power Electronics circuit for DC-AC, AC-DC, DC-DC, AC-AC converters.
- High Gain Hybrid DC-DC and DC-AC Converters.
- Hybrid Multilevel Power Electronics Configuration.
- Multiple Energy Sources e.g. Photovoltaic+Wind+Battery, Fuel cell+Photovoltaic+Battery, Wind+Fuel cell+Battery etc. Grid connected or Battery connected Energy system.
- Hybrid Converter and control for Hybrid Vehicles, Electrical vehicles etc.
- Hybrid Converter for Grid to Vehicle and Vehicle to Grid Applications.
- Hybrid Switched Inductor and Switched Capacitor Circuitry for Hybrid Systems.
- Reliable and low cost solution using Hybrid Energy conversion system.
- Mathematical modelling and analysis of Hybrid Power Electronics Configurations.
- Thermal modelling and loss analysis of hybrid configuration.
- Fault tolerant Hybrid configurations.
- Real-time monitoring, identifying and rectifying of faults in Hybrid Power Electronics Configurations.